## **CLAIMS**

## What is claimed is:

- A dietary supplement composition, comprising freeze-dried Euterpe edulis (Jucara) fruit pulp, wherein the composition:
  - (a) comprises a total anthocyanin concentration greater than about 1 milligram per gram total weight;
  - (b) has an ORAC<sub>FL</sub> value greater than about 350 micromole TE per gram total weight; and
  - (c) has a residual water content less than about 3 weight percent of the total weight.
- 2. A dietary supplement composition, comprising freeze-dried Jucara fruit pulp, wherein the composition:
  - (a) has a cyclooxygenase inhibition value greater than about 15 Aspirin® mg equivalent per gram total weight; and
  - (b) has a residual water content less than about 3 weight percent of the total weight.
- 3. The composition of claim 1 or 2, wherein the dietary supplement composition further comprises a pharmaceutically acceptable carrier.
- 4. A method of producing a stable and palatable Jucara-based dietary supplement composition, the method comprising the steps of:
  - (a) harvesting Jucara fruits;
  - (b) weighing the Jucara fruits;
  - (c) cleaning the Jucara fruits with water;
  - (d) washing the Jucara fruits with water at a temperature of about 75°C to 100°C for a period of time of about 5 seconds to 10 minutes;
  - (e) hulling the Jucara fruits to isolate a Jucara fruit pulp from the Jucara fruits;
  - (f) freezing the Jacara fruit pulp to a temperature less than about -5°C; and
  - (g) freeze-drying the Jucara fruit pulp under conditions to yield a granular, freeze-dried Jucara fruit pulp powder with a residual water content of less than 3 weight percent;

wherein the freeze-dried Jucara fruit pulp powder is more stable and palatable than an Jucara pulp preparation.

- 5. The method of claim 4, wherein the cleaning step consists of cleaning the Jucara fruits with hygienic water at 0.1% (v/v).
- 6. The method of claim 4, wherein the washing step consists of washing the Jucara fruits in water at a temperature of about 80°C for a period of time of about 10 seconds.

7. The method of claim 4, wherein the hulling step consists of mechanically hulling the Jucara fruits for a time period of between about 2 minutes to 5 about minutes and the hulling step is carried out using about 1 liter of water per 2 kg of Jucara fruits.

- 8. The method of claim 4, wherein the Jucara-based dietary supplement composition has an ORAC<sub>FL</sub> value of greater than about 350 micromole TE per gram total weight.
- 9. The method of claim 4, wherein the Jucara-based dietary supplement composition has a cyclooxygenase inhibition value greater than about 15 Aspirin® mg equivalent per gram total weight.
- 10. A method of preventing or treating a disease or an injury induced by pathological free radical reactions in a mammal, the method comprising administering to the mammal an effective amount of the Jucara-based dietary supplement composition of any one of claims 1-3, wherein the composition quenches free radicals and reduces the damage induced by pathological free radicals.
- 11. The method of claim 10, wherein the disease or injury is selected from the group consisting of: cancer, colon cancer, breast cancer, inflammatory bowel disease, Crohn's disease, vascular disease, arthritis, ulcer, acute respiratory distress syndrome, ischemia-reperfusion injury, neurodegenerative disorders, autism, Parkinson's Disease, Alzheimer's Disease, gastrointestinal disease, tissue injury induced by inflammation, and tissue injury induced by an environmental toxin.
- 12. A method for alleviating the deleterious effects of pathological free radical reactions in a mammal afflicted with a disease or an injury induced by pathological free radical reactions in a mammal, the method comprising administering to the mammal an effective amount of the Jucara-based dietary supplement composition of any one of claims 1-3, wherein the composition quenches free radicals and reduces the damage induced by pathological free radicals.
- 13. The method of claim 12, wherein the disease or injury is selected from the group consisting of: cancer, colon cancer, breast cancer, inflammatory bowel disease, Crohn's disease, vascular disease, arthritis, ulcer, acute respiratory distress syndrome, ischemia-reperfusion injury, neurodegenerative disorders, autism, Parkinson's Disease, Alzheimer's Disease, gastrointestinal disease, tissue injury induced by inflammation, and tissue injury induced by an environmental toxin.
- 14. A method of inhibiting cyclooxygenase enzyme activity in a mammal, the method comprising administering to the mammal an effective amount of a composition comprising the Jucara-based dietary supplement composition of any one of claims 1-3.
- 15. The method of claim 14, wherein the composition further comprises a pharmaceutically acceptable carrier.

The method of claim 14, wherein the composition is administered by a route of administration selected from the group consisting of: oral, intravenous, intraperitoneal, subcutaneous, intramuscular, intraarticular, intraarterial, intracerebral, intracerebellar, intrabronchial, intrathecal, topical, and aerosol route.

- 17. A method of preventing or treating a disease or an injury associated with increased cyclooxygenase enzyme activity in a mammal, the method comprising administering to the mammal an effective amount of a composition comprising the Jucara-based dietary supplement composition of any one of claims 1-3.
- 18. The method of claim 17, wherein the composition further comprises a pharmaceutically acceptable carrier.
- 19. The method of claim 17, wherein the composition is administered by a route of administration selected from the group consisting of: oral, intravenous, intraperitoneal, subcutaneous, intramuscular, intraarticular, intraarterial, intracerebral, intracerebellar, intrabronchial, intrathecal, topical, and aerosol route.
- 20. The method of claim 17, wherein the disease or injury is selected from the group consisting of: cancer, colon cancer, breast cancer, inflammatory bowel disease, Crohn's disease, vascular disease, arthritis, ulcer, acute respiratory distress syndrome, ischemia-reperfusion injury, neurodegenerative disorders, autism, Parkinson's Disease, Alzheimer's Disease, gastrointestinal disease, tissue injury induced by inflammation, and tissue injury induced by an environmental toxin.
- 21. A dietary supplement composition, comprising freeze-dried Euterpe oleracea (Açai) fruit pulp, wherein the composition:
  - (a) comprises a total anthocyanin concentration greater than about 1 milligram per gram total weight;
  - (b) has an ORAC<sub>FL</sub> value greater than about 350 micromole TE per gram total weight; and
  - (c) has a residual water content less than about 3 weight percent of the total weight.
- 22. A dietary supplement composition, comprising freeze-dried Açai fruit pulp, wherein the composition:
  - (a) has a cyclooxygenase inhibition value greater than about 15 Aspirin® mg equivalent per gram total weight; and
  - (b) has a residual water content less than about 3 weight percent of the total weight.
- 23. The composition of any one of claim 21 or 22, wherein the dietary supplement composition further comprises a pharmaceutically acceptable carrier.
- 24. A method of producing a stable and palatable Açai-based dietary supplement composition, the method comprising the steps of:
  - (a) harvesting Açai fruits:

- (b) weighing the Açai fruits;
- (c) cleaning the Açai fruits with water;
- (d) washing the Açai fruits with water at a temperature of about 75°C to 100°C for a period of time of about 5 seconds to 10 minutes;
- (e) hulling the Açai fruits to isolate a Açai fruit pulp from the Açai fruits;
- (f) freezing the Açai fruit pulp to a temperature less than about -5°C; and
- (g) freeze-drying the Açai fruit pulp under conditions to yield a granular, freeze-dried Açai fruit pulp powder with a residual water content of less than 3 weight percent;

wherein the freeze-dried Açai fruit pulp powder is more stable and palatable than an Açai pulp preparation.

- 25. The method of claim 24, wherein the cleaning step consists of cleaning the Açai fruits with hygienic water at 0.1% (v/v).
- 26. The method of claim 24, wherein the washing step consists of washing the Açai fruits in water at a temperature of about 80°C for a period of time of about 10 seconds.
- 27. The method of claim 24, wherein the hulling step consists of mechanically hulling the Açai fruits for a time period of between about 2 minutes to 5 about minutes and the hulling step is carried out using about 1 liter of water per 2 kg of Açai fruits.
- 28. The method of claim 24, wherein the Açai-based dietary supplement composition has an ORAC<sub>FL</sub> value of greater than about 350 micromole TE per gram total weight.
- 29. The method of claim 24, wherein the Açai-based dietary supplement composition has a cyclooxygenase inhibition value greater than about 15 Aspirin® mg equivalent per gram total weight.
- 30. A method of preventing or treating a disease or an injury induced by pathological free radical reactions in a mammal, the method comprising administering to the mammal an effective amount of the Açai-based dietary supplement composition of any one of claims 21-23, wherein the composition quenches free radicals and reduces the damage induced by pathological free radicals.
- 31. The method of claim 30, wherein the disease or injury is selected from the group consisting of: cancer, colon cancer, breast cancer, inflammatory bowel disease, Crohn's disease, vascular disease, arthritis, ulcer, acute respiratory distress syndrome, ischemia-reperfusion injury, neurodegenerative disorders, autism, Parkinson's Disease, Alzheimer's Disease, gastrointestinal disease, tissue injury induced by inflammation, and tissue injury induced by an environmental toxin.
- 32. A method for alleviating the deleterious effects of pathological free radical reactions in a mammal afflicted with a disease or an injury induced by pathological free radical reactions in a mammal, the method comprising administering to the mammal an effective amount of the Açai-based dietary

supplement composition of any one of claims 21-23, wherein the composition quenches free radicals and reduces the damage induced by pathological free radicals.

- 33. The method of claim 32, wherein the disease or injury is selected from the group consisting of: cancer, colon cancer, breast cancer, inflammatory bowel disease, Crohn's disease, vascular disease, arthritis, ulcer, acute respiratory distress syndrome, ischemia-reperfusion injury, neurodegenerative disorders, autism, Parkinson's Disease, Alzheimer's Disease, gastrointestinal disease, tissue injury induced by inflammation, and tissue injury induced by an environmental toxin.
- 34. A method of inhibiting cyclooxygenase enzyme activity in a mammal, the method comprising administering to the mammal an effective amount of a composition comprising the Açai-based dietary supplement composition of any one of claims 21-23.
- 35. The method of claim 34, wherein the composition further comprises a pharmaceutically acceptable carrier.
- 36. The method of claim 34, wherein the composition is administered by a route of administration selected from the group consisting of: oral, intravenous, intraperitoneal, subcutaneous, intramuscular, intraarticular, intraarterial, intracerebral, intracerebellar, intrabronchial, intrathecal, topical, and aerosol route.
- 37. A method of preventing or treating a disease or an injury associated with increased cyclooxygenase enzyme activity in a mammal, the method comprising administering to the mammal an effective amount of a composition comprising the Açai-based dietary supplement composition of any one of claims 21-23.
- 38. The method of claim 37, wherein the composition further comprises a pharmaceutically acceptable carrier.
- 39. The method of claim 37, wherein the composition is administered by a route of administration selected from the group consisting of: oral, intravenous, intraperitoneal, subcutaneous, intramuscular, intraarticular, intraarterial, intracerebral, intracerebellar, intrabronchial, intrathecal, topical, and aerosol route.
- 40. The method of claim 33, wherein the disease or injury is selected from the group consisting of: cancer, colon cancer, breast cancer, inflammatory bowel disease, Crohn's disease, vascular disease, arthritis, ulcer, acute respiratory distress syndrome, ischemia-reperfusion injury, neurodegenerative disorders, autism, Parkinson's Disease, Alzheimer's Disease, gastrointestinal disease, tissue injury induced by inflammation, and tissue injury induced by an environmental toxin.